

**Assessment in Design Programmes:
An Investigation into the Approaches and
Values of Assessors at the
Durban University of Technology**

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Durban University of Technology.

By

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I declare that this dissertation is my own work, and has not been previously
submitted to any other Institution or for any other Degree award. All references
quoted or indicated are acknowledged as complete references.



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28 3.2007

Abstract

This study explores assessor approaches and values in Design programmes at the Durban University of Technology (DUT), through a case study approach. The point of departure of the study was that assessment and design knowledge are reciprocally constructed within design programmes, with consequences for design learning. Although the central focus was on summative, terminal assessment of complex performance in Design, formative assessment interactions inescapably impacted on the study.

Data collection proceeded through sub-case interviews with assessors from the programmes comprising the School of Design at DUT. The analysis approach was structured around the Community of Practice model, and informed by themes from Design Studies, Design Education and Learning Theory.

Implications for the summative assessment of complex design performance concerned relations between learning autonomy and design knowledge. Recommendations for a negotiated design curriculum in which assessment contracts might foreground student strengths were made.

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CHAPTER 1

INTRODUCTION TO THE STUDY

“And even the Italian futurists, though they exalted the machine and the artificial object, did not fail to notice the vaguely spectral nature of the objects surrounding them, which, in an enigmatic and disquieting manner, reproduce our social and affective relationships. In *Vengono: Dramma di Oggetti (They are Coming: A Play of Objects)*, F. T. Marinetti spoke of the “strange fantastic life” and of the “mysterious suggestions” of certain pieces of furniture, placing on the stage only eight chairs, an armchair, and a table”.

(Maurizio Vitta, 1996:34)

Vitta’s description of the powerful meanings of designed objects in social life gives a sense of what fields of Design Education might embrace. It is no exaggeration to say that designed objects and images function as spectacle, as revelation of life circumstances, and as interpretation of social and cultural values. Design students’ interpretation of this conceptual complexity in two- or three dimensional products represents the ‘performance’ of this meaning.

This study takes up this proposition in terms of the educational assessment of design performance; in short, how assessors in Design programmes conceive of Design as an area of knowledge, and how they consequently deal with assessment of students’ design products. Phillida Salmon (1995:25) has said that students’ relations with the Art and Design curriculum are no less complex than that of tutors. My interest in the assessment of complex design performance is rooted in this awareness.

1.1 MOTIVATION AND PURPOSE OF THE STUDY

The assessment of Design is notoriously unreliable, centred as it is on a series of formative and summative interpretive judgements which involve close relations between students and assessors. Adding to this assessment challenge, though a

design programme may be described as 'Interior Design', 'Graphic Design' or 'Fashion', these descriptions do not in reality confine design applications to a particular programme curriculum remit. To illustrate: it is acceptable for a Jewellery Design student to produce a sculptural artefact that explores relationships between form and materials, that is not meant to be worn on the human body. Similarly, a Graphic Design student might explore digital representation of Industrial Design drawing specifications.

Assessment interactions are typically more frequent and more intense in Art and Design programmes than in other areas of education. They take place in informal, formative interactions with students in studio design activities, in design critiques where tutors engage students in evaluative discussion, and in more formal formative and summative assessments that involve both artefacts and written work. These are *performance* assessments that involve multiple solutions and latitude of interpretation.

Such intensely social interactions are the main focus of students' time and attention; yet Design Education has not featured prominently in educational research, probably because of the non-standard, performance-based approach that is taken in design assessment (Ehmann, 2005:108-109). Design Education scholarship as a far smaller body of research deals mainly with the difficult relationships between teaching, learning, and *the concept of design* across areas of Design Education provision.

On one hand, design assessor approaches, particularly as they concern design knowledge are a problematic area, because design is socially consumed and interpreted in the outside world. On the other hand, the educational values of design assessors come into play in assessment interactions, but may not be made explicit. Inquiry into the implications of approaches to design assessment, and the educational values that are made manifest in assessment interactions is then the purpose of this study.

1.2 FOCUS OF THE STUDY

This is a case study involving the four Design programmes that comprise the School of Design at the Durban University of Technology (DUT, henceforth), as sub-cases:

**Graphic Design,
Jewellery Design,
Interior Design, and
Fashion and Textiles.**

The study seeks to explore three main questions:

- How do assessor values and approaches construct Design as an area of knowledge?
- How do these values and approaches promote design learning?
- What are the implications of this for summative assessment of complex performance in Design?

The programmes mentioned above all conduct continuous assessment involving staged formative and summative assessments. This case study focuses on terminal summative assessments of complex design performance within these Design programmes, where assessor approaches and values are most likely to be concentrated.

1.3 KEY RESEARCH POINTS OF DEPARTURE

Following the lead of Design Educational theorists, I explore in this study variations in the way in which *Design* is conceived across sub-cases. My contention is that it is this rather than the indeterminate and diffuse range of design applications in any one programme that drives assessment.

In order to explore these conceptions of Design, I make use of Wenger's (1999:82-83) idea of the ongoing development of a repertoire of practice within a community of practice. Design as an area of knowledge in each programme sub-case is explored through the epistemologically fluid concept of a developing repertoire of practice.

Two theoretical viewpoints underpin these points of departure. The first is Grundy's viewpoint (1987:115) that a programme curriculum as a discursive entity is not pre-formed, but formed through its ongoing practices and activities. Based upon the assumption that design applications or enterprises within sub-cases will be of indeterminate scope, I have treated the summative assessment practices of each programme sub-case as discursively expressive of a repertoire of beliefs about the phenomenon of Design within each of these programmes. Secondly, I have treated assessment processes as the crux of these activities and practices, following the emphasis that Arlene Oak (2000:86-93) and others such as Dannels (1995) Jackson (1995) Davies (1997) and Ehmann (2005) place on assessment interactions between students and tutors in Design. Those assessors who conduct summative, terminal assessment of complex design performance at the third-year exit level are chosen as research participants in this case study. They have been selected because they bear the responsibility for implementing summatively integrated assessment which is aligned with formative assessment interactions, and is representative of what the programme as whole achieves at this level.

Regarding the ways in which design practice is developed, it has seemed reasonable to adopt the view that whilst perspectives on Design may differ across sub-case programmes, there is a symbiotic relationship between theory and practice in Design education (Ziff, 2000), which does then entail assessment of integrative, complex tasks. The performance of these complex tasks in Design also necessarily involves Biggs's (1996:351) 'performance of understanding' of theoretical and practical aspects of Design.

Assessment interactions are seen in this case study as *social learning* encounters (Gipps, 1999:373) between students and assessors. Outside of differences between programme sub-case practice repertoires, and following Vitta's (1996:34) evocation of the communicative powers of designed objects in social life, assessment of students' design expression concerns their interpretation of others' needs in the world beyond the programme of study (Davies and Reid 2000:4-5; Oak, 2000:90; Dineen, 2003:3; Lawson, 2004:21; Ebbsen and Vihma, 2006:1-2). This is an imperative that involves knowing about collective social circumstances, or *societal knowledge*.

Finally, my own role in this case study moves through stages of participation, observation and reflection. For this reason, I explain the methodological approach of this study in the next chapter, Chapter 2, before undertaking a review of related literature in Chapter 3.

CHAPTER 2

METHODOLOGY

The rationale for methodological decisions taken in this research is presented in this chapter. As I have explained in Chapter 1, the motivation for this study was based upon my interest in the summative assessment of complex design performance, as it constructs design knowledge and impacts upon design learning. Pursuing this interest required initial consideration of the practicability of this project.

It made sense to explore design approaches and values in my own educational institution. The School of Design in the Faculty of Arts at the Durban University of Technology consists of four Design programmes. These presented the opportunity of a Design case study unit that could comprise of sub-cases in respect of each of the four programmes.

The Fashion and Textiles programme (in which I teach) is one of the four Design programmes. In evaluating the advantages and disadvantages of undertaking case study research that included my own assessment practice, I took into account the following considerations:

If the case study were to be comprised of summative assessment practices in only three of the four programmes comprising the School of Design at DUT, and excluded the Design programme in which I teach, this would amount to an indefensible case study omission. Further, the participation in this case study of another assessor within the Design programme in which I teach (Fashion and Textiles) was not advisable, since it is chiefly my responsibility to deal with summative assessment of complex design performance at the programme third-year Diploma exit level.

My own participation as both researcher and assessor within the case would require measures for ensuring rigour and ethical research conduct, which are discussed later in this chapter. Reflexive monitoring of my research process would however be

assisted by the nature of case study research, in which theory and own theory are heuristically ventured (Merriam, 1998:29-30).

2.1 RESEARCH ORIENTATION OF THE CASE STUDY

Research questions described in Chapter 1 concern the reciprocal ways in which design knowledge shapes design assessment and vice versa, with consequences for design learning. The attitudes and approaches of assessors participating in the case study were anticipated to be contextually related to Design knowledge as an object that is collectively interpreted and re-interpreted within sub-case programmes. Assessment is seen in this case study as the primary vehicle for such collective programme interpretations of Design knowledge. The epistemological orientation of research therefore fits that of social constructionism. Thomas Schwandt (1994:125-127) characterises social constructionism as an epistemology in which collective interpretations are negotiated among groups of people, by contrast with the *constructivist* idea of highly individual shaping of knowledge.

How proximate these related aspects of the case study might be, and to what degree programme assessors as research sub-case participants might or might not share conceptions of design knowledge could not be anticipated. Therefore a research design that might counter necessary presuppositions through reflective observation was planned. As David Boud and David Walker have noted, reflection is highly context-specific: this powerfully affects what kinds of reflection are possible (1998:191). This case study was then particularistic (Merriam, 1998:29-30) with regard to situational implications for summative assessment of complex performance. Unlike some case studies, it makes no claim to generalisable knowledge, but may offer local insights into the ways in which assessment constructs design knowledge and influences design learning.

2.2 CASE STUDY RESEARCH DESIGN

Necessary permission to pursue this project was obtained from the Dean of the Faculty of Arts, and Heads of (programme) Departments were contacted in order to secure their permission for depth interviews to take place with one assessor per programme. These assessors were provided with informed consent documents which detailed research aims and methods, and which also included an undertaking of confidentiality regarding assessment materials and submissions, as well as anonymity of the assessor research participants.

2.2.1 SUB-CASES WITHIN THE CASE STUDY

Each sub-case within this case study consisted of one in-depth interview with one assessor participant from each of the four programmes comprising the School of Design at DUT. These assessors were purposively selected (Patton, 1990) on the basis that they played a key role in the summative assessment of complex design performance at the third year exit level of each programme. As such, each assessor functioned as a representative for programme sub-case 'communities of practice' (Wenger, 1998, 1999).

Because my own researcher-participant position within this case study had to be rigorously managed, both data collection and analysis in respect of my own sub-case had to occur *before* data collection and analysis of interviews in respect of the remaining three sub-cases. This strategy was adopted to sensitise me to my own position, which would influence my participation in the other three sub-case interviews, but should not obtrude upon the viewpoints of my colleague interviewees. The management of my own positionality within the overall case study is further expanded in this and following chapters.

2.2.2 SUB-CASE INTERVIEWS

Since sub-case study interviews were conducted in the educational setting of the Faculty of Arts, DUT and concerned matters of mutual interest, they could be characterised according to Kvale's (1996:43) 'knowledge as conversation'

description. It was important that interviews be conducted in a such a way as to acknowledge and indeed promote the ongoing collegial relationship that I have enjoyed with each of my peer assessors. This interview approach concerned not only the credibility and therefore the benefit of research to those participating in the study, but also the authenticity of interview data. Therefore, conversational turn-taking rather than the sequence of the semi-structured interview guide used in interviews governed the flow of talk. Questions, observations, comments and explanations were then equally contributed by myself and peer assessors.

My own Fashion and Textiles sub-case interview was conducted by the Research Co-ordinator of the Faculty of Arts, DUT, who had experience of Design programme concerns through previous School of Design research activities, and with whom I also enjoy a collegial relationship.

For each sub-case, including my own, assessors provided examples of student work that could stimulate and orientate discussion. These examples of student work were however to conform to the requirement across sub-cases that they constituted terminal third- year summative assessment submissions from the year ending 2005, and that the summative tasks set in respect of these submissions required complex design performance. Assessment materials (task briefs) in respect of these summative tasks were also to be provided for discussion in interviews.

2.2.3 INTERVIEW SCHEDULE

In these interviews, the semi-structured interview guide provided overleaf contributed to but did not limit discussion of assessment practice.

TABLE 2.1 SEMI-STRUCTURED INTERVIEW SCHEDULE

A. Discussion of assessment materials
<ol style="list-style-type: none"> 1. Summative Assessment task planning/design – SAQA₁ registered outcomes? Assessor intentionality? Negotiation with students? 2. Task authenticity in terms of Design praxis: relevance. 3. Degree of student latitude of interpretive response to task, and assessor view of learning autonomy. Convergent/Divergent assessment approach.
B. Discussion of assessment submissions
<ol style="list-style-type: none"> 1. Reasoning around summative mark award (in order to elicit value constructs). 2. Assessor view of integrative learning, learning transfer, learning transformation.
C. Discussion of tutor assessment practice
<ol style="list-style-type: none"> 1. How do A and B relate to programme summative assessment practice at third year level in general? 2. How might summative assessment practice at third year level change in future?
₁ South African Qualifications Authority

2.2.4 CASE STUDY STRUCTURE AND DATA ANALYSIS

Though I as researcher in this case study am the primary instigator and ‘producer’ of research findings, I needed to find a strategy for balancing this role with that of research participant. Chris Argyris and Donald Schön’s (1978) landmark distinction between single and double loop learning engendered thinking about procedural stratagems that might achieve this balance.

Briefly, single loop learning involves the assumption that espoused theory is applied in action (Argyris and Schön, 1974, 1978), or practice. Double loop learning involves questioning the governing assumptions of espoused theory, and also questioning its efficacy in practice (Argyris and Schön, 1974, 1978). I decided that I could expose the assumptions of my espoused theory by first analysing my own sub-case interview data in the light of related literature. After this, I could gain further insight into my own assessment practice sub-case by comparing it with sub-case data in respect of the

other Design sub-cases. Strengthening the advisability of this research gambit, Miller and Glassner (1997:100) say that qualitative researchers utilise their own preconceptions and values as an aid to generating intersubjective or 'deep-mutual understanding' data. At the same time, comparison across sub-cases (including my own sub-case) afforded the opportunity becoming conscious of underlying assumptions (Wadsworth, 1998).

I anticipated that this reflective comparison across assessor interview sub-cases might generate case study implications regarding the integrative, transferable and transformative potential of summative assessment strategies across sub-cases. Accordingly, the case study proceeds through single and double loop (Argyris and Schön, 1974, 1978) stages in the following ways:

1. Espoused theory that emerged from my own (Fashion and Textiles) sub-case interview is advanced in the first section of the literature review chapter of this study (Chapter 3), and discussed in terms of related Design Studies theory. This establishes my positionality as a researcher in this case study.
2. In the second section of the same chapter, the fit between design educational- and learning theory is explored. This development of theory underpins further sub-case data collection in respect of the Graphic Design, Jewellery Design and Interior Design programme sub-cases. These two stages comprise the single loop stage of research.
3. Data collection in sub-case depth interviews involves mutual participation and observations made in conversational exchange. This provides sub-case data in respect of the three programmes just mentioned.
4. Data collected for each sub-case is discussed from the point of view of comparative observations in Chapter 4. This provides for reflection on the case study as a whole, and causes a shift from my espoused theory as an educational practitioner to an altered, research-based perspective.
5. Reflective observations on the case study in Chapter 5 lead to implications for the assessment of complex design performance in the School of Design, DUT. This completes a double loop recapitulation of foregoing research stages, and offers suggestions for further research.

The structure of the case study is schematically represented in Figure 2.1 overleaf.

CHAPTER 3

REVIEW OF RELATED LITERATURE

As an educator in the Fashion and Textiles field of Design, my summative assessment approach has been shaped initially by my thirteen-year career in the Fashion industry, and later by reading and research into the cultural study of Fashion. Overall, I have aimed to amalgamate professional experience and research with educational views on assessment as a valuable learning opportunity.

In the first section (3.1) of this chapter I present the issues that arose in the Fashion and Textiles sub-case of this case study (which consists of the interview with me, the Fashion and Textiles assessor). These issues are put forward as they have formed my assessment positionality within the overall case study, before I conducted interviews in respect of the other three case study sub-cases (Graphic Design, Jewellery Design, and Interior Design) of Design assessment. Each section of 3.1 below begins with a section (3.1.1; 3.1.3; and 3.1.5) which outlines the key ideas from my own sub-case (Fashion and Textiles), before a following section which reviews how these ideas are treated theoretically in relevant literature in the area known as 'Design Studies'. This is a body of scholarship that is not explicitly educational, and deals more with the social and cultural functions of Design.

On this basis I go on in the second section of this chapter to discuss design assessment values and learning theory, exploring the fit between these.

3.1 DESIGN ASSESSMENT APPROACH

As I have mentioned in Chapter 1, each of the School of Design programmes participating in this study are regarded as representing what Etienne Wenger (1998: 45) calls a community of practice, (CoP, hereinafter) that seeks to fulfil a particular

philosophy of design learning. I use Wenger's CoP (1998, 1999) model as a tool for structuring analysis in this study.

This model centres on Wenger's definitions of how relationships between people, practices and activities are organised. The CoP viewpoint is that learning happens while we interact with others in various enterprises; this is Wenger's idea of *mutual engagement* (1999:78-81). In order to facilitate mutual engagement, we define *joint enterprise* (1999:78-81) in terms of how our interactions with each other and the world outside should proceed. Over time, what matters to the group of people involved in sharing these enterprises becomes identified as a '*shared repertoire*' (1999:82-83). To continue to function, a community of practice needs a shared description of practices, resources, vocabulary and symbols that represent its accumulated knowledge, or repertoire

The importance of Wenger's CoP model to the ways in which assessment might support learning dates back to his earlier collaborative work with Jean Lave. Instead of asking about cognitive and conceptual processes of learning, they ask what kinds of social interactions provide the proper context for learning to take place (Lave and Wenger 1991: 14). In design fields, as Design Educational theorists such as Davies (1997), Oak (2000), Ehmann (2005) and others have asserted, this context is pre-eminently that of assessment interactions. These interactions take place informally in design studios, where tutors engage with students in the process of 'making' design artefacts, more formally in design critiques, where tutors engage students in discussion of their design products, and formally in final summative assessment.

There are several more ways in which the CoP framework relates to design assessment. Mark Smith comments that communities of practice offer support in handling unstructured problems (2003:6), which are characteristic of design performance. CoPs foster learning as something that occurs in relationships between people, and it is in these relationships that pieces of information take on relevance (Smith, 2003:6); in CoPs learning does not belong to individual persons; rather, there is a situated and close connection between knowledge and activity (Smith, 2003:8) that parallels design practice, where knowledge is expressed through 'making' and 'doing'.

The CoP framework is chiefly useful to this study in two ways. First, as I have said, assessment is central to learning engagement with Design (Ehmann, 2005:107), and takes place in the social interaction between assessor and student. It is then possible to see assessment as forming Wenger's (1999:78-81) *mutual engagement* dynamic in the sub-cases of this study. Secondly, the indeterminate scope of design enterprise within sub-case programmes can be accommodated by regarding programme sub-cases as having *repertoires of practice* that develop over time (Wenger, 1999:82-83).

I therefore make use of Wenger's (1999) shared repertoire, mutual engagement and joint enterprise dynamics to structure scrutiny of my own summative assessment approach, as it has emerged from my sub-case interview. My sub-case data is examined in terms of central Design Studies concepts, in order to establish my sub-case researcher position.

3.1.1 FASHION AND TEXTILES DESIGN REPERTOIRE

Essentially, as a bald summation, a fashion designer must produce fashion garments that express some appealing form of change from previous modes of dress, and it is the designer's task to encode this change in the technical construction of garments. However, innovative garment designs cannot be arbitrarily offered to the consumer public. Fashion products need to be targeted through a close monitoring of the social and cultural factors that continually re-define markets.

The summative and terminal assessment task that I described in my own sub-case interview (the Fashion and Textiles sub-case) is a Design Research Journal that reflects upon cyclical design processes of planning, implementation and evaluation, as a simplified research framework. Within this framework, students' design intentions as the driving force of practical design would, according to task learning outcomes provide a basis for evaluating the reception of their design products in social life. In the Fashion and Textiles programme, theoretical study underpins critical inquiry into both aesthetic and commercial influences on fashion acceptance in the social world. Practical design endeavours are informed by these critical

considerations, and evaluated on the same basis. This briefly describes the shared design repertoire of the Fashion and Textiles programme.

3.1.2 DISCUSSION: WHAT IS DESIGN?

Theorists writing in the area of Design Studies adopt a Material Culture Studies (MCS) approach to explaining the concept of Design. Ebbesen and Vihma (2006:1-2) argue that the meaning of Design is centrally located in MCS, because MCS concentrates on methodological approaches to understanding the cultural value of designed commodities, dealing with the ways in which they mediate social interaction in everyday life. To begin to unpack this very condensed statement, I refer back to the opening statement of Chapter 1, where Vitta (1996:34) puts on view the way in which designed objects 'reproduce' social relationships. This is an esoteric but fundamental idea about Design that deserves further support and explanation.

Authors such as Barnard (1998) Palmer and Dodson (1996), Margolin and Buchanan (1996) and others devote many pages to the attempt of a definition of Design. Ebbesen and Vihma (2006:2) note that such studies take a postmodernist, semiological approach to elucidating Design as a phenomenon of Visual Culture, a sub-field of Material Culture studies. They profile the work of Judith Attfield, giving her brief but encompassing definition of Design as "the integration of artefacts into the social world beyond empirical study centred on physical features, through the acquisition of social meaning within specific cultural/historical contexts" (Ebbesen and Vihma 2006:3). In their review of MCS approaches to Design, Ebbesen and Vihma stress consumer appropriation of design meanings, that go beyond the reach of the design process proper (2006: 3).

In simpler terms, designed objects acquire meaning as visual, material artefacts through who uses/consumes them, in what contexts, and when they are used/consumed. An example of this is the Mini motor car. In the 1960's, the Mini motor car became a symbol of youth, freedom and fun. It was an affordable young person's car. Now, the Mini Cooper as a re-lease of the original Mini is an expensive car bought by those who, though affluent, wish to associate themselves with the carefree energy of the 1960's. As this sort of idea takes root, it begins to influence

the judgements people make about each other, and with whom they choose to form social relationships.

There is then in Design Education a need to support student enquiry into the societal processes and circumstances in which designed objects take on meaning.

3.1.3 FASHION AND TEXTILES DESIGN ENTERPRISE

In my own (Fashion and Textiles) sub-case interview, I expressed our view that students should think about others' interpretation of visual references or symbols used in their design work. The summative assessment task asked students to reflect on factors that might mediate between their visual design conceptions and visual design reception in social life. Contexts of design communication that had either been specified in previous design briefs, or were identified by the student formed the basis of this discussion.

These design briefs usually begin with investigation of current and historical processes and circumstances. They range from media events to design themes of cultural expression over time, in the Design Theory course component. Student investigation of emerging market intelligence in the Business Studies course component complements this enquiry. Subsequently, design development takes this enquiry forward through preliminary drawings in which ideas are explored and refined, before final presentation boards and technical specifications are completed. The two-dimensional design stage then moves to translation of design concepts into three-dimensional garment forms, through pattern making and garment construction. These aspects of design process are formatively assessed by staff members along the way.

Apart from these three student- selected practical design projects, the Design Research Journal included two mandatory tasks, which were a Work Integrated Learning Report, and a Design Research Proposal. Both of these tasks had been previously marked, with written feedback to each student. My purpose regarding the former task was that students would think about simulated learning in relation to work-based design activities. In the latter Design Research Proposal task, I wanted

them to make connections between their real life observations of fashion issues and contexts, and the formulation of a design problem.

These formative learning components are incorporated in the Design Research Journal summative assessment task, and represent joint enterprise in the Fashion and Textiles programme.

3.1.4 DISCUSSION: HOW IS DESIGN COMMUNICATED?

Richard Buchanan (1996:91) suggests that design communication may be the most central theme of Design Studies, and Maurizio Vitta, writing from an Italian perspective, gives special attention to the production and manipulation of social meanings through goods as communication instruments (1996: 32).

The Fashion and Textiles repertoire of practice places the same communicative emphasis on the meaning functions of garments as products. Chiefly, the Fashion and Textiles design enterprise significance of this lies in the imagery that fashion objects come to bear through hugely diversified and mediated modes of consumption. This rather complex proposition is well grounded in theoretical explanation of design in material culture. Vitta (1996:32–33) presents Baudrillard's argument that through advertising and other media influences, objects lose their original meaning. They become simulacra of themselves, mere informative instruments that transfer the image of themselves onto the individuals who consume them, becoming completely identified with the manner in which they are consumed (Vitta, 1996:32). This results in a process of meaning classifications and social differentiations based on the conceptualised imagery that objects carry, that overrides attention to the objects themselves (Vitta, 1996:32).

My own Fashion and Textiles sub-case interview data shows that my summative assessment brief relies upon students' previous absorption of ideas about Design along these lines.

That students would also see the technological execution of Design as very much serving their communicative intentions was an explicit Design Research Journal requirement.

Richard Buchanan (1996:96) sees technology as one of three elements in the communicative function of Design, which he refers to as rhetorical 'design argument'. Technology is the 'logos' or reasoning element of design, based in part on premises for the construction of objects, and in part on the attitudes and values of potential users and the physical conditions of actual use (Buchanan, 1996:96-101).

Buchanan's second communicative element of design argument is character or ethos – that which reflects makers, and persuades potential users that the product has credibility (1996:101). He gives the 'artless' example of a designer label as a communication of character, but extends this idea to qualities of good sense, apparent virtue, and goodwill toward the audience (1996:101). Design associations with the modernist refinement of 'good' Scandinavian design, and David Stairs's (2006) emphasis on socially responsible and ecologically sound design spring to mind here. In further expanding this concept of character or ethos, Buchanan (1996:102) says that objects, such as the pair of dividers he illustrates, "do not possess beauty but show a concern for beauty". Designers may seek to challenge or advance cultural standards by conveying a hostile, spirited, subtle or modest ethos; irony has also come to be valued by audiences, perhaps as a reaction to modernist ideals (Buchanan, 1996:102-103).

Certainly, questioning ideals of beauty and debunking cultural norms is the rule rather than the exception in the Fashion and Textiles programme.

Buchanan's third element of design argument is emotion or pathos, "that collapses the distance between the object and the minds of users" by powerful expression through lines, colours, and shapes – Buchanan uses a wrench to show this, lauding its "compelling simple curve" that "sends the mind of the observer back and forth in a dynamic balance that is visually satisfying" (1996:104). Emotion and pathos call to wider frames of aesthetics and fine art, as a broader argument (Buchanan, 1996:103).

Taken as a whole, Vitta and Buchanan's views show how design intentions toward an audience may be communicated through the imagery that becomes socially associated with the material qualities of objects.

3.1.5 FASHION AND TEXTILES DESIGN ENGAGEMENT

I adopt the CoP idea of *mutual engagement* here, as the crucible of relations between assessors and students in the Fashion and Textiles sub-case of this study.

By and large, in Fashion and Textiles, we want students to reckon with their design approaches in the process of completing both practical and theoretical design work over a six-month period. We have believed that formative design reflection-in-action in respect of these design activities (Schön, 1987:44-79) would be transformed into new insights through the summative writing task of reflection-on-action (Schön, 1983:26). Reflection-in-action was informally formatively assessed in very lively mutual engagement through tutorial discussions, where students compared their learning experiences with considerable insight. Reflection-on-action was also formatively assessed through two prior submissions of the Design Research Journal as a work in progress.

A theme from my Fashion and Textiles sub-case interview was theory and practice integration that evaluates the viewpoints of others – peer design students, theoretical perspectives, and professional designers. In formative tutorial engagement with students, I had attempted to allow them to see theory in a very broad sense, as something that did not necessarily come from books. I stated in my interview that we have thought this task relevant because it encourages students to theorise their practice, and to practice their own design theory.

I made the further interview point that a design sketchbook is also a design research journal – but that written articulation in this journal was needed because students would have to explain and promote their design approach in working life. We have held the belief that reflective writing develops the ability to think more critically and therefore speak more persuasively (Fashion and Textiles Programme and Subject Guide, 2006), and that this assessment strategy was relevant on this count. As I put

it in the interview “there is a need to say what you are doing and why you are doing it and also to allow this to be shaped by the viewpoints of others”. Further Fashion and Textiles sub-case interview data represented the transformative supposition that “integrative learning is learning where not only are connections made between discrete areas of learning, but also that learning can become socially available – can be communicated and articulated.

On analysing the Fashion and Textiles interview, it occurred to me that we have had high expectations of learning integration, and that the organisation of such a journal poses a considerable challenge. I remembered my mixed feelings while marking these journals. I was most interested in student’s reflections, and impressed by flashes of deep insight, but felt some consternation at trying to follow the thread of student’s discussions.

3.1.6 DISCUSSION: HOW IS DESIGN ASSESSED?

Arlene Oak’s (2000: 87) account of student and tutor roles in assessment in presents the general purpose of assessment in the field of Design:

“Studio design activity in an educational setting is largely centred around making. Usually, when given a design assignment, students are given a project brief that is a written outline of a problem that the students must solve in an object form. Unlike problems of logic, which have a correct solution, there is no single answer to the ill-defined problem set by a design brief. Each student is likely to create a solution which is distinctly individual.

When solving a brief’s problem in the area of product and furniture design, for example, students may first visit libraries or contact manufacturers in order to research materials and processes, however, most of students’ time and attention is directed to actually planning and making the object which will be their solution to the problem. Students make sketches and rough models, honing their decisions into a form which will be finalised in a finished model and/or technical drawings – an object(s).But the studio education of a designer involves more than just making, it also involves developing the ideas which form the basis for making. These ideas, or assumptions, come first, then the object, and it is after making the object that the success of the assumptions are determined and the object can be changed, or finished as a final prototype. So design is a dialectical process based around assuming, making, and assessing, until the final making is industrial production and the final assessment is the consumer’s.

.....At the individual and informal level, during the processes of making, the students are constantly judging how their object should be changed, while, at the institutional and more formal level, design instructors offer assessment which ranges from casual comment to formal criticism.”

(Oak, 2000:87)

The sorts of design assumptions that students and assessors need to contend with are revealed by Oak’s account, as they bring together design execution and design communication. Evaluation and self- evaluation is a constant process in design.

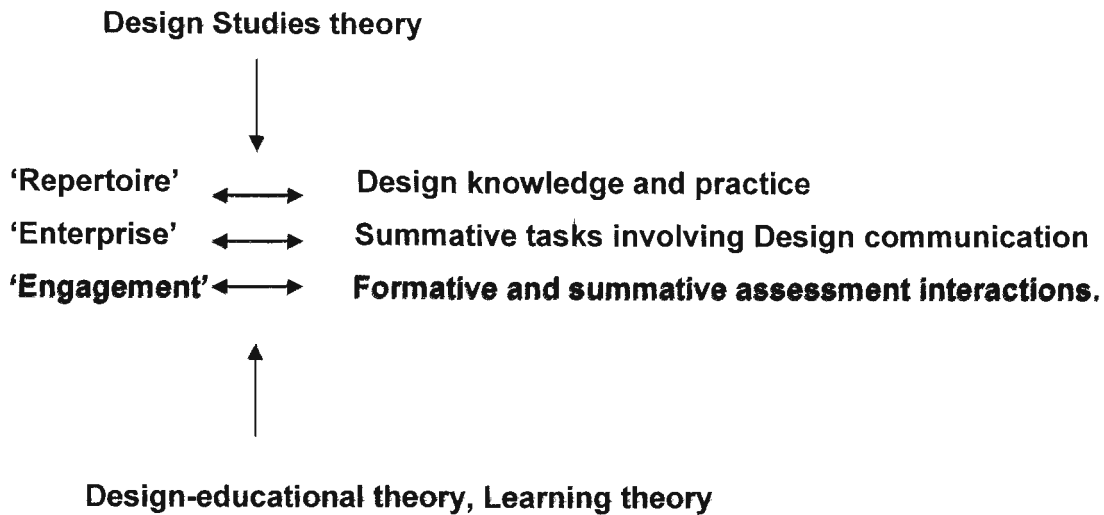
3.1.7 SUMMARY: DESIGN ASSESSMENT OF COMPLEX PERFORMANCE

Design performance can be regarded as a complex, multifaceted practice in which the understanding of design consumption in the social world plays a central role.

Oak’s (2000:87) rendering of design assessment exposes the suppositions of my assessment approach – that practical design learning should be conceptually framed in relation to the design viewpoints of others. This puts a joint enterprise emphasis on the construction of design knowledge that emerges from my own Fashion and Textiles sub-case interview.

In attempting to frame my own assessment practice within the broader but moveable bounds of design knowledge, I used Wenger’s (1999) community of practice model to explore assessment practice issues. In Figure 3.1 overleaf I show how this exploratory structure relates to the case study of design assessment, and how it connects with areas of theory.

FIGURE 3.1 COMMUNITY OF PRACTICE AND THEORY IN THE CASE STUDY



3.2 DESIGN ASSESSMENT VALUES AND LEARNING THEORY

In this chapter section I open up the educational issues raised by my own assessment sub-case position, as they connect with the Design Studies theory I have discussed, and as they further impinge on Design Education and learning theory perspectives.

Caroline Gipps makes the observation that changing views of learning have strong implications for assessment (1999:372-373). Largely these changes constitute a movement away from technical perspectives to humanistic perspectives. Technical perspectives dictate what students should do, and how to do it properly; this amounts to social and cultural control (James, 2000:156-159) from a critical pedagogy standpoint. Humanist perspectives relinquish this control in Gipps's explanation of socio-cultural assessment (1999:372-379), in order to deal with the ethical, practical and philosophical implications of relations between students and assessors.

Oak's (2000:87) account of design assessment processes that occur at the interface between students and assessors could well serve as an exemplar of the sociocultural approach to learning. As Gipps (1999:373) explains, social constructivists see learning as situated in the social interaction between students and tutors. This does

though bring certain responsibilities to the planning of summative assessment: These, as they impact upon this case study, are itemised below:

1. Summative assessment concerns task authenticity with regard to design knowledge values. Here, on the evidence of the Design Studies literature that I have connected with my own assessment position, *societal knowledge* is targeted.
2. The authenticity of a summative assessment task relates to prior formative assessment. Here, it is *social interaction* with students within programmes of study that implements the integrative pursuit of societal knowledge.
3. The authenticity of a summative assessment task embraces autonomous learning as an educational value that is central to design learning.

On account of the first point above, the authenticity of summative assessment tasks as they might represent knowledge that is relevant to professional practice, to further research or indeed to lifelong learning (Montgomery, 2002:36-38) is a philosophical question of worldview. Apart from disciplinary, interdisciplinary and professional forms of knowledge, Bowden and Marton (1998:247-248) draw attention to a fourth knowledge framework, that of *societal knowledge* which informs disciplines and professions. Knowledge from this worldview perspective does not emanate from academia or traditions of professional practice, but from the social world in the sense of the wider society beyond the classroom.

Secondly, as a practical issue, the progression of formative assessment toward summative assessment tasks must accommodate transformations of learning that allow the student not merely to know more, but to know differently (Taylor and Marienau 1997:236).

Thirdly, authentic assessment activities concurrently embrace autonomous integration or organisation of learning on the part of students (Montgomery, 2002:37) as an ethical issue.

I go on to discuss design task authenticity, learning autonomy, learning integration and learning transformation in turn over the following pages.

3.2.1 DESIGN TASK AUTHENTICITY

Montgomery (citing Wiggins, 1989) holds that task authenticity rests on mirroring the challenges and performances of the professional field; students should show their understanding of this essential knowledge by actually using it in tasks (2002: no page number). If 'essential knowledge' is reposed in the curriculum rather than any particular subject, this does require that the curriculum is constructively aligned (Biggs, 1996); in other words, that it generates systemic learning activities that allow students to construct their own understanding (Biggs, 1996:349). Bigg's phrase 'performance of understanding' applies to tasks with which students interact in a thoughtful and searching way that reveals their understanding (1996:351).

'Performance of understanding' in Design is tied to the more intensely interactive performance or project assessments strategies that Gipps (1999:374) distinguishes from standardised assessment strategies like multiple choice or short-answer tests. Rowntree (1987:44-45) makes a similar distinction between tasks which students value as a personal opportunity to express and enlarge their capabilities, versus instrumental tasks that emphasise the means towards the satisfaction of external goals. With regard to instrumental, goal orientated tasks, Gosling (2000:296) has shown how the goal of success may replace that of understanding in student work.

Performance assessment tasks do though still originate in the ineffable contingencies of design knowledge. Torrance (2000:173) illustrates this point in his discussion of assessment in relation to Foucault's work on discursive meaning. He says that words and thoughts are generated through certain situated discursive practices; such situated practices systematically form the objects of which they speak, and in doing so conceal their own invention (Torrance, 2000:173). In Design, the authenticity of an assessed design task may similarly be implicit in a programme repertoire of practice which for assessors is discursively represented in formative assessments as they proceed toward summative assessment. But the wording of summative design brief objectives may not explicitly reveal this to students, nor recapitulate the attainment intentions of formative assessment interactions.

Returning to Bigg's constructive alignment, the authenticity of an assessed task is not limited to the task itself, but is established through relevance to the programme curriculum as a discursive entity that is not pre-formed, but formed through its ongoing practices and activities (Grundy 1987:115). The well-spring of task authenticity may then be unobvious, being a situated expression of a curricular system rather than a context of design interpretation. For example, a summative task could require that the student identify a design context in which a piece of jewellery has meaning; the student may present a piece that is, according to supporting presentation boards, inspired by Harry Potter films, wizardry, magic, and ideas about good and evil. The curriculum supports such an endeavour by developing general interpretive skills, by study of art, design and culture, and by fostering technical skills. But the curriculum can only systemically rather than directly support such a contextual interpretation. Alternatively, an assessor may specify the context a summative task of interpretation, such as the design of pet shop; again such a contextual design application will not have been previously tackled in the programme, but formative tasks will have generally scaffolded the student's ability to specify design issues with a context. Authenticity on this count then depends on an alignment of systemic curricular elements that facilitates contextual performance of understanding. This is an issue that problematises the ownership of task authenticity

There is also students' learning experience of life outside of the curriculum to consider, that must play a role in their design expression. This moves discussion to student learning autonomy.

3.2.2 DESIGN LEARNING AUTONOMY

Loacker and Jensen (1988:128) have said that interrelationships between ability, content and context need to be considered in the planning of assessment. Since there is no defined corpus of disciplinary knowledge content to be assessed in design (Gray, 2006), autonomy of learning might appear to rest on the relationship between ability and context. However, it seems reasonable to say that *experience of life* (the social practices and activities in which design takes on meaning) forms the content that design students initially bring to design tasks, which is then re-shaped by the curricular processes discussed in the previous section.

Writing on Art and Design Education, Phillida Salmon sees experiential learning in terms of personal constructs that are revised through reflection on practical experience – as she says, 'knowledge cannot be divorced from knowers' (1995:27). Experiential learning requires that students integrate their classroom experience with other aspects of what they personally know, bringing their lived understanding outside of education to bear on what they do and see in education (Salmon, 1995:26). Salmon construes personal learning as assuming an attitude of authority toward the learning task – in an evaluative stance that weighs own strengths and weaknesses (1995:27). Students then become able to *own* their design decisions.

From a general educational perspective, David Boud and Nod Miller (1996:3) have similarly emphasised experiential learning in settings outside of the classroom, together with the significance of the students learning experience in relation to others within a programme of study (1996: 4 -5). Within the delivery of a curriculum, learning depends upon the explicit or implicit contract which exists between the learner and the other (Boud 1996:4). Within this contract, Boud and Miller note that while learning is highly situation specific, the extent to which the intentions of the learner can be revealed is in question (1996:4). Recognition of learning autonomy is then constrained to the contextual bounds of summative assessment, as these bounds also recapture formative assessment.

With regard to situational contracts of learning, Jean Lave and Etienne Wenger (1991: 29) advocate active participation in the social relationships of a community of practice that fosters learning, in other words, class-room participation. This participation moves from peripheral to full participation in CoP activities (Lave and Wenger 1991:29). In summative, terminal assessment, then, is there an expectation of full participation? Autonomy in this light is a matter of the degree to which understanding of a practice repertoire can be independently expressed within a design curriculum. Mostly, the reality is that students are expected to participate in a programme community of practice, and assessment is based on this participation.

Extending this view, Oak (2000: 87) says that “designed objects result from compromises, not from the unconstrained individual personality”. In her analysis of design critiques as a form of assessment, she highlights the tension between the

vocational imperatives of Design, and those that are more personal (Oak, 2000:89). Students were made aware in these design critiques that they must bridge these polarities, that “they must speak both their own and another’s language” (Oak, 2000: 90).

Oak’s conclusions bring into question whether an authentic assessment task can simultaneously elicit student autonomous design learning as well as fit into a community of practice.

3.2.3 DESIGN LEARNING INTEGRATION

Christopher Nokes (2005:31) says that design assignments as assessed tasks involve both design intent and solutions, requiring students to define the problem, and use design processes of research that generate alternative solutions. Typically this involves free-hand sketches and storyboarding to track the design decision making process (Nokes 2005:31). Certainly this does provide assessment evidence of integrative process, but it does not necessarily represent integrative learning.

Davies and Reid (2000:2-6), through their analysis design student interviews bring into question relationships between conceptions of learning and conceptions of design that construct ‘the design entity’. They advance the following formulations of learning and design as externally and internally constituted:

- “1. Extrinsic Technical: Being able to apply skills appropriately - Design is about doing.
2. Extrinsic Meaning: Being able to meet the needs of society - Design is about interpreting.
3. Intrinsic Meaning: Being able to communicate -Design is about living.”

Davies and Reid (2000:4-5)

Learning conceptions 1-3 above typically involve different aspects of the world around students, that include the techniques they use, the brief they follow, and the design applications and solutions they choose (Davies and Reid, 2000:4). Davies and Reid note however that there is a fourth, qualitatively different conception of

student learning – learning about themselves, learning to innovate and change: this focus is for Davies and Reid one of integration associated with self expression and reflection (2000:5).

Returning to the design process dimension of practical learning integration, Bryan Lawson (2004:80) draws an interesting distinction between technical skills of 'modelling' and 'carving'. The use of digital CAD systems involves modelling design by adding, subtracting or manipulating image components, whereas carving is a reflective process of making design in which materials affect the emergence of the final design form (Lawson, 2004:80). These different forms of creativity are perhaps unequal in their capacity to allow students to develop an understanding of how they work. This needs to be factored into how formative assessment in the form of critiques or tutorial contributes to summative assessment; Debra Ehmann, a researcher in design assessment, recommends that greater weighting be given to assessment of design process (2005: 109).

If, in Design, 'theory' embodies not just theoretical perspectives but also self-theory as understanding that comes from reflection on process, techniques and materials, on self-expression, and on interpretive communication, there is much to be integrated in design praxis. In this regard it seems as if both the relational and extended abstract levels of John Biggs's (1996: 351-352) Structure of the Observed Learning Outcome (SOLO) taxonomy are involved in design learning integration. Biggs describes how a learner's performance grows through accrual of task learning components, which then become qualitatively restructured at relational and abstract levels (Biggs, 1996:351-352). Understanding that integrates learning components into a coherent whole, where each component contributes to overall meaning constitutes the relational level of an observed learning outcome (Biggs, 1996:352). At the extended abstract level, the integrated, relational whole is conceived at an abstract level, enabling metacognition (thinking about thinking) and conceptual generalisation to a new area or topic (Biggs, 1996:352).

Summative assessment of complex performance assumes integration of design learning through a formative process of learning and feedback. If Davies and Reid's (2000:4-5) extrinsic and intrinsic forms of design expression (applying technical skills,

interpreting and communicating) are targeted in summative assessment, the expectation of performed learning integration is highly complex. It would seem that both relational and abstract (Biggs 1996:351-352) learning outcomes would be required in this assessment scenario.

3.2.4 DESIGN LEARNING TRANSFORMATION

Mezirow (1991:12), puts transformation of learning in the realm of active, creative implementation of a purpose, and equates this with 'praxis'. This endorses design integration as transformative; one example of this is to be seen in design drawings as transformations between problem and solution (Lawson, 2004:59).

Lawson suggests that a framing process is necessary to the sharpening of design focus, because it is not possible to think of all that needs to be integrated in design at one time (2004:91). This kind of framing includes episodic memory of precedents in lived or media experience of cultural forms and events – inspiring art and design, films, photography, or even travel (Lawson 2004:94- 96). Precedents and references are often recorded in sketchbooks, as items that provide a useful design point of departure. In this sense there is a parallel with Mezirow's perspective transformation, where a prior interpretation is used to construe a new one (1991:2).

Lawson (2004:105) also proposes that the History and Theory of Design, if taught as *semantic* knowledge is less available to the design student, who draws more upon *experiential or episodic* knowledge in order to establish precedent. He discriminates between long-term theoretical, semantic or symbolic memory and episodic, experiential memory (Lawson, 2004:100-101), that takes little effort to recall. Transformations in the development of design expertise start with schemata, or concepts about designed objects, that are used to deal with information that might seem banal to the lay person; the way a brick wall is built, for instance, may represent 'English', 'Flemish', or 'garden wall' (Lawson, 2004:108). Again, the parallel with Mezirow is in meaning schemes that are "constellations of concepts, beliefs, judgments, and feelings which shape a particular interpretation" (Mezirow 1994:223). For Lawson (2004:111) the acquisition of design expertise requires the development of a substantial pool of experiential and episodic knowledge that begins during

education; design educators encourage the absorption of precedent through field trips, the use of graphical representation, and the organization of libraries.

Largely, design learning is on this account a series of transformations from one set of knowledge to another (Goel, cited by Lawson 2004:59). This progression begins with acquiring design domain schemata which are then amassed into a pool of precedent (Lawson, 2004:118). Guiding principles are then developed, that allow the designer to structure and filter precedent knowledge (ibid). Next, the designer shows the ability to recognise situations with little effort of problem analysis. Finally, a repertoire of design gambits are integrated into schemata and used to recognise problems (ibid).

Ronald Barnett expands on transformative theory and practice relationships somewhat differently. 'Theory' embraces specific subject-based objectives and general educational aims, while 'practice' involves specific professional objectives and general transferable objectives (Barnett, 1992:169 -170). The difference is, per Barnett, that theory is about educational learning transformation in curricular subjects; practice is about professions and transferable learning. Barnett goes on to show that generally, the curriculum balance in Higher Education may be tilted toward propositional knowledge (knowing-that) or toward action (knowing how) as acceptable forms of address and interchange within in a disciplinary sub-culture (Barnett, 1992:169-176). This is a ubiquitous educational distinction, but one that is not readily applied to design.

Interestingly for the design assessor's recognition of transformation in learning, Barnett mentions the key importance of communication skills in the general scheme of higher education (1992:173-174). He follows this observation with distinctions between written, oral, performative and pictorial communication forms (Barnett, 2004:177–178). Design educators cannot afford to make such cleavages. In Design pictorial, object, oral and written forms are all performative of some kind of understanding of Design, *which are at the same time constructed by students*. Subjects and theory cannot then be directly linked to assessment evidence in order to recognise learning transformation.

Moving this argument forward, Roy Prentice (1995:12) elaborates on the design transformation trajectory as moving from the 'making' function of manipulating visual images, tools and expressive media to the role of critic. This involves the capacity to "evaluate from *within* the activity that which evolves *through* the activity: the realisation of intention in concrete form"; a transformation occurs at the interface between intention and expressive media (Prentice 1995:12).

Pong Wing Yan makes a valuable contribution to these conceptions of design learning transformation. Her phenomenological research paper on the structure of awareness makes the simple but incisive point that changes in awareness of the meaning of a phenomenon run parallel with changes in focus (Yan, 1999). This is significant to the way in which assessors may see learning transformation in the continuum of formative assessment as it proceeds to terminal summative evaluation.

3.2.5 DESIGN LEARNING TRANSFER

Ruth Dineen offers noteworthy considerations to the transferability of design learning through her investigation into of the British Art and Design Benchmark Statement (2003). The principle aim of the Benchmark Statement is to prepare students for continuing personal and professional development, with sub-aims that emphasise the generation of ideas (concepts/proposals/solutions/arguments) and the production of material outcomes (Dineen, 2003:3). Outcomes "are informed by an understanding of media, process, visual language and the context (cultural, economic, political etc.) in which they will be read" (Dineen, 2003:3). This configuration of transferable skills ranks contextual understanding alongside practical knowledge and conceptual capability. Significantly, Barnett (1992:155) notes that exercising skills that are integral to a discipline means that students are providing part of the knowledge of the discipline, albeit a largely tacit form of this knowledge. Skills, he says, have been maligned when they should be seen as the means through which knowledge and understanding are carried forward (Barnett, 1992:156).

Micklethwaite's (2005:87) interviews with UK Design stakeholders reveal contrasting emphases on design learning transfer: those of creativity and attitude. In his study, one Higher Education interviewee contrasts creativity with analytical skills, valuing

creativity more highly, and implying that analytical skills are far easier to acquire (Micklethwaite, 2005:87). In another interview a director of a design agency plumbs for 'attitude and ability' rather than 'skill', saying that skills can be taught, but the same is not true of attitude and ability (Micklethwaite 2005: 87).

Micklethwaite's interview data resonates with distinctions that Mosely *et al* make in their lengthy and comprehensive analysis of thinking skills frameworks (2003). They separate concrete thinking (accurate observation and representation) from conceptual thinking, and substitute caring, value-grounded thinking for reflective thinking (Mosely *et al* 2003:44). Here a link with attitude is presented, as an important factor in transferable knowledge. McLoughlin (1997) is of the same mind: in her analysis of higher order transferable skills, she points out the key role of attitude as it constitutes disposition toward the content and practices of a discipline.

Following from the foregoing discussion, learning attributes such as achievement, motivation, creativity, and aptitude require that constructs be created to explain something that cannot be observed with the natural senses (Hopkins and Ante 1985:17). Given that Design educators have expressed the difficulty surrounding assessment of these transferable design skills (Roberts, 1990; Davies, 1997; Oak, 2000; Dineen, 2003; Parker, 2005) they are more likely to be implicit than explicit in summative design assessment tasks.

3.2.6 TRANSFERABLE SKILLS IN DESIGN

There are parallels between the concerns of Design Education and Mantz Yorke's (1995) paper on assessment of higher order transferable skills. In this paper Yorke does not definitively list what these skills may be. Rather, he juxtaposes educational interests with arguments about what capability is.

To elucidate transferable skills in Design, I borrow from Yorke's balancing of vocational interests and student capability.

Referring to recommendations made to the Massachusetts Institute of Technology in 1989, Yorke lists the following educational interests:

Creating a new cadre of students and faculty characterised by

1. Interest in, and knowledge of, real problems and their societal, economic and political context.
2. An ability to function effectively as members of a team creating new products, processes and systems.
3. An ability to operate effectively beyond the confines of a single discipline.
4. An integration of a deep understanding of science and technology with practical knowledge, a hands-on orientation and experimental skills and insight.

(Yorke, 1995:6)

If communities of practice in the Design programmes that form sub-cases in this case study are read for the teamwork that Yorke mentions in point 2 above, and if their programmes embrace Design beyond programme-specific interests, then Yorke's description of the values that should be shared between faculty and students (1-4 above) are important to design assessment approach.

From the student point of view, Yorke sees capability as essentially integrative of the following attributes:

- a wide repertoire of skills;
- the capacity to select from the repertoire, and to combine skills appropriately;
- the ability to be a 'reflective practitioner' (Schon, 1983)
- adaptability; and
- autonomy

(Yorke, 1995: 6)

These two sets of ideas condition each other to form an holistic idea of higher order transferable skills that is not reducible to an overdetermining, comprehensive or definitive list. In the field of Design Education, such skills take on strong significance because they embrace both personal and societal knowledge in the pursuit of innovative design.

3.3 SUMMARY: DESIGN LEARNING AND ASSESSMENT

Whether summative assessment of complex design performance in the programmes participating in this case study is explicitly or implicitly integrative, how learning is transformed, and how learning transfer is conceived were central aspects of case study data collection in sub-case interviews with programme assessors.

In these interviews, I sought to achieve some necessary distance from the epistemological density of the design-theoretical perspectives presented in the first section of this chapter. However, in the light of related literature in this chapter, I also anticipated that design task authenticity and design learning autonomy would be related to integrative, transformative and transferable learning in complex ways.

The educational values surrounding these theoretical concepts became important themes in case data analysis, which I present in the following chapter.

CHAPTER 4

CASE DATA ANALYSIS

In this chapter I set out to make the kind of selective observations on case study interview data that Angrosino and Mays de Perez (2000:677) define as a systematic focus on different types of activities. This approach was taxing; my participation in interviews with colleague assessors brought a need to constantly oscillate between interview transcripts as they described assessment activities, with a consequent alteration of perspective on my own sub-case data.

I also needed to re-visit discussion of my own sub-case interview data through Wenger's (1998, 1999) Community of Practice framework, that has played an organising role in my immersion in the theoretical perspectives of this case study. Commitment to the CoP structuring framework needed be consistently applied to analysis of the remaining three sub-case assessor interviews.

However, during the stage of interview transcription I found myself overwhelmed by the plethora of meanings that emerged in data, and made copious notes of these as they cross-referenced all interview transcripts. Moving from these random and spontaneous perceptions to a systematically selective observational viewpoint without obscuring the immediate sense of what my colleagues said in interviews was an onerous responsibility. I have therefore elected to use interview text excerpts from all sub-case interviews to explain the observations I have made. These excerpts have been edited for the sake of salience, but embrace much more than the *a priori* design assessment issues that my semi-structured interview schedule sought to explore.

My analysis strategy was to move from the most broadly embracing aspects of assessment approach in interviews to assessment values that became increasingly specific. In this process of moving from generality to specificity I noted that broad assessment approaches are located *within* programme fields of design knowledge,

and pursue a particular design skills transfer *end*, or assessment purpose. More specific value constructs, which I deal with in the second section of this analysis, lay *outside* of design knowledge, in the realm of assessor beliefs about learning, and how learning should *proceed* toward summative assessment.

There is middle ground between starting points and end points, and space between what lies inside and outside of assessment procedures. I found that a crucial interregnum or lapse in the orderliness of assessment conduct occurred between broad approaches and specific values. In pausing to take stock of primary data emerging from the interviews, a shift occurred in my own espousal of theoretical perspectives in Chapter 3, which I discuss more fully in Chapter 5.

Because of the need to show my observations as resulting from oscillation between sub-cases, and because initial analysis of my own assessment postionality is covered in Chapter 3, I have thought it best not to confuse matters by highlighting data from my own sub-case interview in this analysis. Therefore, in the interests of the anonymity of all interview participants (including the data which comes from my own interview sub-case), they are designated in interview excerpts by the letters **A**, **B**, **C** and **D**. Where I have posed a question or made a comment, the letter **R** (for researcher) is indicated. All programme-specific terms have been omitted, or replaced with neutral design-orientated descriptions.

My observations are made after each excerpt; this format is used throughout the analysis.

4.1 BROAD ASSESSMENT APPROACHES

As in my own sub-case interview analysis, Wenger's (1999) Community of Practice (CoP) framework of shared repertoire, joint enterprise and mutual engagement is used to explore broad assessment approaches across the sub-case interviews that comprise this case study.

4.1.1 COMMUNITY OF PRACTICE CHARACTERISTICS

The macro-interpretive framework within which participants are expected to assess is that of SAQA outcomes registered in respect of each of the programmes. These were however directly connected to assessment approaches only in one sub-case, and then in a very opaque way: Participant C was confident in a specific outcome around which the assessment task was constructed, but for the other three case study participants, SAQA outcomes relating to their assessment tasks were seen as somewhat vague.

Interview vignettes of Wenger's (1999:82-83) repertoires of practice within programmes were more illuminating of the ways in which design disciplinary conceptions describe assessment approaches.

A: our outcomes would be something like produce [design] that has a relationship with the industry..... by industry we mean, the direction that she chooses and that is recognizable and that there probably are references and there are other people doing something like this so that when we talk of [design] we don't talk of [only mainstream products]..... we don't just impose upon them and say just make a [] we say we want to give you something that's not purely commercial, and we need to see what other things are out there that you are interested inbut it's not allowed to be commercial..... that there are already too many examples of
non-commercial design repertoire

B: It's not sort of explicitly in terms of SAQA outcomes – I mean 1.1 this is what you do to meet that, 1.2 this is what you do to meet that It's not that closely linked but we are aware of the requirements in framing things like this - in the context of this project, the students actually go out and talk to people who the design work is being done for or community groups in the broad sense.....[Excerpt from brief: research.....with reference to relevant social, economic, political, ethical and/or technological factors, historical background, and important influences and/or contributors; both in South Africa and internationally].
cultural design repertoire

C: The SAQA outcome is 'Apply the creative process to the practical solution 2 and 3 dimensional design problems within [the design-disciplinary context]' – which is exactly what this student has done. This particular task is complex – they need to have a clear design concept, a theme. What we actually do is – a week into the project they have to come up with a concept which we then crit. And we prescribe to them what they need to produce.....actually give a client – we draw up what we think is a personality.....
professional practice design repertoire

D: *It doesn't relate to SAQA outcomes directly as they were last year.... there was an exit level outcome 'apply basic research methodology' and some vague specific outcomes of very grand scope.....We want them to include other peoples design and influences on design. If a student is inspired by Klimt and uses [Klimt in a design application].....we want them to ponder whether their intention is interpretable by others . We want them to think about collective interpretations in the public sphere.*

social design repertoire

These repertoires of design practice reflect the meaning of design in the world beyond programme curricula. Their varying scope describes bounds of task authenticity (Montgomery, 2002) that range from the confines of a particular professional design application, to the lived world at large. Per Baumann (Preface, 1999:xx) the term 'culture' (as it pertains to the *cultural repertoire* ascribed to sub-case B) refers to aggregations of values, and to larger dynamics of prevailing and evolving practices and beliefs within which social interactions occur (as they may pertain to the *social repertoire* ascribed to sub-case D).

Within these bounds lies the interpretive range of visual design communication that is assessed. Where the onus rests for delimiting this range (with students, or with assessors) is also established. Here there are indications within sub-cases of the degree of student autonomy or latitude of interpretation that assessed tasks allow. Running parallel with these two issues, assessor expectations around the creativity, innovation, originality and significance of student work go to the 'ends' that design tasks pursue.

A: *..... [commercial design] is something that there are already too many examples of. It's almost like they're clichés.....a variation of something which I suppose ultimately all things are. The cliché of commercial [design] is so strong that it's difficult to make commercial [design] look different. So it's almost like innovation and distinction in terms of commercial [design] will come when they leave..... I'll look at how well things fit together how it manifests – whether it's convincing whether you can just put it in a context – in a shop or in a gallery and it's part of what they have to stipulate. This is the place that they are making it for. Display it on a piece of velvet or marble. We concentrate a lot on presentation. So the fact that there is a context within which it can sort of stand.*

**a context of visual design communication
student establishes this context
innovation**

B: R– is there any negotiation with the student- about the assessment – It's really that the students are choosing the subject matter so in that way it is very much negotiated? **B:** No we don't tell them what to research um but they do get informed as to how this is going to be done.....we would look for a novel or original concept which is relevant to the industry.

an industry relevant context of visual design communication
student establishes this context
originality

C: The SAQA outcome is 'Apply the creative process to the practical solution of 2- and 3-dimensional design problem..... we actually give a client – we draw up what we think is a personality.....

this context of visual design communication
assessor establishes this context
creativity

D: We want them to ponder whether their intention is interpretable by others. We want them to think about collective interpretations in the public sphere. I want them to see what can go wrong with such an endeavour, and in doing so learn more about targeting design. We also want them to be able to mediate between their own intentions and the reception their design gets.....

mediated contexts of visual design communication
student establishes contexts
significance

These aspects of assessor approach are consolidated in Table 4.1 below, and followed by further observations on their significance.

Table 4.1 Assessor Approaches: Community of Practice Characteristics

	A	B	C	D
CoP repertoire	non-commercial repertoire	cultural repertoire	professional practice repertoire	social repertoire
design communication that embodies	student establishes.... a context innovation	student establishes.... an industry relevant context originality	assessor establishes.... this context creativity	student discusses mediated contexts significance

What assessors expect students to contribute to their respective repertoires of practice through the enterprise of design meaning communication of (originality or creativity, for example) is complicated by contingency on who specifies the context of design communication, and what it is. Summative assessment is substantially differentiated in what it should accomplish.

Parker's (2005:190) view of creativity is that it takes place within a structure that provides necessary knowledge, skills and understanding – a view endorsed by Reid and Petocz (2004: 52), who say that design creativity cannot be defined independently of domain criteria. These views endorse the approach of participant C (where the assessor establishes the context of design interpretation). In opposition to this standpoint, Roberts (1990:36) has noted criticism of educational prescription of design tendency and intention, and for Danvers (2003:50 -51) unpredictability is essential to design innovation and inventiveness, as characterised by the testimony of participants A and B, (where students establish the design context). With regard to the approach of participant D, (where students reflect upon how design contexts are mediated) Lawson (2004:100) has cited Schön's comment that designers inhabit worlds which contain 'particular configurations of things, relations and qualities – a view that prioritises relational significance.

These differences across sub-cases brought a need to suspend the focus on broad assessment approaches. The observational separation between broad assessment approaches and specific values became untenable at this point, because the development of design learning through assessment is implicit in both approaches and values.

4.2 INTERREGNUM: DESIGN ENGAGEMENT AND ENTERPRISE

Looking at relationships between task authenticity and relevance to a repertoire of practice, on one hand, and student latitude of interpretation of these assessment tasks on the other hand shows further expectations for student-centred design thinking that impact upon autonomy as a condition of learning transfer. Barnett has

said that it is the student's ordering of learning experience, and the student's ability to put this in a wider frame that counts for transferability (1992:157).

Any one of the assessor approaches (evidenced thus far in sub-cases A, B, C or D) could support student learning autonomy. But the apparent differences between sub-cases require a closer look at participative relationships of CoP mutual engagement with assessment between assessors and students.

Through the lens of Wenger's (1999) *mutual engagement* and *joint enterprise* aspects of communities of practice, such participation can be seen in:

- a way of *engaging* with the design task which is *mutual* (i.e. between the assessor and student) if there is prior formative collaboration on the task between them.
- a design task which either emanates from the programme curriculum as a joint *enterprise*, or is conceived partially at least by the student (*student-centred*).

Sub-case Interview comments illustrate these issues:

A: ... our intention is for them to have developed that body of knowledge that is located with – it's their taste their direction that they think they're interested in. We're looking for proof that they have found and developed that at the end of the year...Part of the project is that they have to develop an artist's statement ...they have to establish their referenceswrite their artist's statement using terminology and understanding of terminologywe first get them to go out there and gather references in various areas that they are interested in – sort of trying to get them to construct their taste. This is who I am, this is what I like – hopefully this is why I like it

**mutual engagement
with personal design enterprise**

B: (Extract from task brief: Research and discuss the unique development of a selected area of [] design)they have to generate their own written component and design for it we do expect that the presentation of the final project will make visual reference to the subject matter.... in a project like this we would expect images from the original material and then its very easy to compare the images that they've gathered and included in the project with the project itself ... we don't tell them what

to research but they do get informed as to how this is going to be done.....they've had pretty much a free hand in terms of how its going to look at the end - the visual presentation....

**mutual engagement
with personal design enterprise**

C: we would have a look to see whether it's feasible A student does have a chance to justify their work to us, explain to us why they chose to do certain things

**mutual engagement
with joint design enterprise**

D: What was negotiated was not the task itself but ways of fulfilling task requirements.....There is a need to say what you are doing and why you are doing it, and also to allow this to be shaped by the viewpoints of others

**mutual engagement
with joint design enterprise**

Whether there can be genuine mutual engagement between facilitator assessors and students where design enterprise is determined by the student depends on the educational values of assessors, and has much to do with their implicitly espoused learning theories. The design education scholarship discussed in Chapter 3 is not decided as to whether personal or societal knowledge is pre-eminently important to design expertise; also, Barnett (1992:161) as an educational theorist has cast doubt on the transferability of personal knowledge. Considering the uneasy position of design learning between personal and societal knowledge beyond the classroom, formative mutual engagement with joint enterprise seems to require an almost utopian level of student and assessor co-operation in communication about the design task. This problem has further ramifications that emerge in the following analysis section, where specific assessment values hold sway over formative and summative assessment.

4.3 SPECIFIC ASSESSMENT VALUES

Values associated with assessment procedure were more objective and constructed design learning in specific ways. There was a sense of how design practice should start out in order to go on that is evident in the detail of assessment process. This way-of-going-on is conditioned by community of practice aspects of engagement and enterprise.

4.3.1 INTEGRATION

All participant assessors expected that information, knowledge and experience outside of the curriculum should be integrated in summative tasks. In this endeavour, design concepts were developed and formatively assessed through research involving drawing, reading, writing, speaking, collecting visual references, and establishing design audience needs. These activities involved integration of theory and practice in various ways:

A: *Part of the project is that they have to develop an artist's statementusing terminology and understanding of terminology one of the ways of making sense of it is from books. We start this whole thing with the drawing subject where they have to do a visual diary where we first get them to go out there and gather references in various areas that they are interested in. So we're trying to use the practice from which to develop the theory in different ways . You see here for example it says the subject is [] design and [] technology. But then the drawing that they produced for this is marked for the drawing subject so the subjects come together most of the year is spent trying to integrate design and technology....It has a lot of substance to it...it operates as it stands by itself.... our external moderator comes in and looks at this and says this piece works..... I'll look at the finish, how well things fit together – I suppose technical things....*

Formative: Limited written component, preliminary drawings/images.

Summative: Substantial visual design concept, execution and presentation.

Integration: Theory informs practice, practice informs theory.

B: *Extract from Brief: 'Craftsmanship and thought given to manner, methods and materials used.....'...this is the sort of only substantial piece of design that they would do in third year.....they have to generate their own written component and design for it so its integrated in a way that they don't often get in the other subjects -the final project will make visual reference to the subject matter - it will refer to the original subject matter in its own appearance but its not actually written about in the essay -I mean apart from anything else in a project like that we would expect images from the original material and then its very easy to compare the images that they've gathered and included in the project with the project itself.*

Formative: Writing and preliminary drawings/images

Summative: Visual design concept, execution and presentation. Substantial written component

Integration: Theory comes from primary research and secondary sources, and is applied in practice.

C: *We do try to link the projects to our theory components. One of the requirements of the brief was to do a written document – they have to take what they learn in professional practice - and part of that is speaking, so they need to present their work. What we look at when we look at is the communication of the work.] ... They do a [] which goes towards the drawing and communication side. They're applying*

theory here which they've learnt in [a technical subject]. She has boards here which show all the [concept elements] The concept and aesthetic is the overall appeal. Drawing and communication she's communicated her design intentions.

Formative: Small written component, preliminary drawings/images, oral presentation

Summative: Visual design concept, execution and presentation

Integration: Prescribed theory is applied in practice

D:the task requires students to include two mandatory and three self-selected assignments. The mandatory projects are: Experiential training (now called Work Integrated learning) and a Design Research Proposal. The other three can be selected by the student from any of the design projects set during the year. The purpose of including the Experiential training assignment is for students to think about simulated learning in relation to work-based design activities. The Design Research Proposal is a simplified research proposal that asks students to make connections between their real life observations, and the formulation of a design problem The task is relevant I think because it encourages students to theorise their practice, and to practice their own design theory..... verbal articulation in this journal is needed because students will need to explain and promote their design approach in working life. There is a need to say what you are doing and why you are doing it, and also to allow this to be shaped by the viewpoints of others. The task is a summation of ability to do this.

Summative: Written self-assessment

Formative: Visual design concept, execution and presentation

Integration: Theory comes from practice, practice comes from theory

In Tables 4. 2 and 4.3 I carry forward interview observations on mutual engagement and personal or joint enterprise so that they can be seen in relation to formative and summative assessment. These tabulations are intended to support the theory/practice relationships that are represented in Table 4.4.

Table 4.2 Formative Assessment Of Design Tasks

Formatively assessed: mutual engagement			
A Writing and preliminary drawings/images	B Writing and preliminary drawings/images	C Writing, oral presentation and preliminary drawings/images,	D Visual design concept, execution and presentation

Differences between what is formatively assessed across sub-cases are most notable in sub-case B, where substantial writing and research work *generates*

applied design, and in sub-case D where applied design *forms the basis for* substantial written reflective self-assessment. These aspects of assessment purpose contrast with that of sub-case A, where written and visual design work *reciprocally develop design practice* and sub-case C, where written work is limited, and *scaffolds* applied design interpretation

Table 4.3 Summative Assessment of Design Tasks

Summatively assessed			
A	B	C	D
Visual design concept, execution and presentation	Visual design concept, execution and presentation Written research component *.	Visual design concept, execution and presentation	Written self - assessment

Theory and practice integration therefore exists across sub-cases in relationships of *before and after*, where applied practice is a product of theory and research process or theory is a product of applied practice process, or both. Interestingly, Lawson has commented that “teaching of the history or philosophy of design may leave students with well developed knowledge that they nevertheless find hard to connect with knowledge they use when actually designing” (Lawson, 2004:104).

Table 4.4 Theory/Practice Relationships

A	B	C	D
Personal design enterprise		Joint design enterprise	
Research and theory inform practice, practice informs theory	Research and theory inform practice.	Theory informs practice	Research and theory inform practice, practice informs theory.

It is apparent that there is no correlation across sub-cases of personal enterprise and joint enterprise with theory as a precursor to or result of applied design.

Personal design enterprise also still falls within CoP repertoires of non-commercial design in sub-case A, and cultural design in sub-case B. In sub-cases C and D, joint enterprise is situated within professional design and social design repertoires. All of these repertoires may however be considered to be both social and cultural. The question of personal versus societal knowledge that emerged in design engagement with design enterprise is further opened up by the comments made by assessors on learning transformation and learning transfer in following analysis sections.

Clearly relational knowledge (Biggs 1996:351-352) is valued in sub-cases A, B, and C, where links between the visual design concept, execution and presentation of student design work are summatively assessed. In sub-case D, Bigg's highest level of learning attainment, that of extended abstract learning (1996:352), is summatively assessed through written evaluation of practice. This assessment demand contrasts with values placed on theoretical knowledge as an adjunct or scaffolding aid to design practice in sub-cases B and C.

4.3.2 DESIGN LEARNING TRANSFORMATION

For all assessors, transformed learning is evident in summative tasks in that personal knowledge is relocated to 'a different place'. This happens through the accumulation of process learning in formative and summative tasks, and shows itself in a change of student stance toward design that affords altered and wider perspectives.

Additional learning transformation values that are particular to sub-cases are given below each excerpt:

B *The approach that we have is the notion of diverging and identifying, then converging on that. Converge then diverge again. It's like going through a doorway and seeing what is there then choosing another one and seeing what is there they start finding themselves – they kind of find their space – its like they arrived in a different place. Like they have been climbing the stairs and they get to the top – no, not the stairs – more picking up things, then baking them in the oven, and its like a surreptitious change, when you put it all together, what is it that came together. You know its like that word bricolage, its retrospective.*

Diverge, converge, diverge
Change of direction

B..... *[the project is] integrated, it takes longer, it's more in depth etc., etc – . It means that they end up knowing more about [] because they've had to apply it in more ways or more depth or whatever And certainly I've had a number of students who've come to me and said - "I really hated this project in the beginning because I was struggling with all kinds of things but I really enjoyed it when it was finished because of getting to grips with stuff etc* **R** *Do you think it causes a shift?* **B** *in the best examples, yes. At the bottom end of the scale, its just drudgery.* **R** *: But potentially it could cause people to see the whole thing differently?* **B** *It has done. There've been people who have come up with a project in third year, who have taken them into B.Tech in a direction which they weren't thinking of or which has taken them in a different professional direction which they haven't previously considered.*

Surface to deep learning

Attitude shift

C..... *they're kind of embracing some sort of changes here.....You can see that she's worked on it and we encourage the student to change - they'll take an idea and they'll want to keep that idea close to them and it might be a really really bad idea, but they don't want to let go of that idea, they want to make it work. And we say to them just let go of that idea, and embrace something else.* **R** *Do you think the task transforms their learning?* **C** *Absolutely. Each time we give them a project, you can see how they grow in that project.*

Change of direction

Growth

D *What achieves a distinction is where the student can show flexible, adaptive thinking and can draw new conclusions from their design process, can transform their understanding, can discover new significance and thereby extend design understanding. In a low pass mark, the student is not showing transitions – they don't show, for instance, how they have planned or implemented design, and then offer critical comment that suggests other ways of doing things. What they do is simply provide an evaluation of their design products. In a fail mark, there is typically just a reporting of what has transpired in design which is very passive – it doesn't engage critically with the student's own practice and there's no real evaluation that takes other viewpoints into account.*

Alternative stances

Conceptions of learning transformation are consolidated in Table 4.5 overleaf, which shows first those conceptions that were expressed across sub-cases, and then those that differed across sub-cases. In all cases transformation of design learning is a personal matter, but it occurs through changed positioning in relation to the wider social and cultural significance of design.

Table 4.5 Conceptions of Design Learning Transformation

Transformation through cumulative process learning			
Change of stance			
Alternative perspectives			
Relocation of personal knowledge			
A	B	C	D
Diverge, converge, diverge Change of direction Attitude shift	Change of direction Attitude shift Surface to Deep learning	Change of direction Growth	Alternative stances

As much as these conceptions of learning transformation place value on change, they also hark to assessor awareness of precedents in students' design work. This means at the very least that preliminary formative assessment influences assessment judgements, whether this has been formally or informally conducted. But it may also mean that design learning transformation as an assessment value relies on shared knowledge both within and outside of programmes. The only way in which this is at all possible is if Material Culture Studies, referred to in design pedagogical theory as MCS (Ebbesen and Vihma, 2006), underpins what John Danvers calls perspectival knowledge (2003:51) as a shared design repertoire. MCS, as I have mentioned in Chapter 3, embraces methods of inquiry that see knowledge as contingent upon social processes and cultural circumstances.

4.3.3 DESIGN LEARNING TRANSFER

The values expressed by participants with regard to learning transfer loosely encompass design repertoires, but had much more to do with the outlook or disposition that students were thought to gain through integrative and transformative learning benefits of assessment tasks.

A I think very unintentionally and fortunately, we are very aware of critical cross-field outcomes.... we just automatically happen to think those are important, you know like your ability to understand the world with all of them they can choose where they want to go. We have no idea there. So we do try to make sure they have general skills that are applicable in an unknown area.it's not like – just concentrate on [a particular material or issue]....in a way we're trying to get them to become quite

specific – it seems to be a big battle for us to try get them to realize what it is they want to do – and then become very good at that. But everything that goes before that would enable them to go into any direction. I think it's just because we have this emphasis on their personal interests I remember a lecturer talked about Levi Strauss – he said: “do what you can with what you have where you are”.

understanding of the world

understanding own disposition

knowing own resources, what can be done with them, and in what situation

B:in terms of community involvement.....the students actually go out and talk to people who the design work is being done for or community groups in the broad sense who have made use of some form of [this design application]. So it takes them into that sort of direction and we hope that if they go on to 4th year they will go out and develop whichever of those directions they are most interested in.....There are a number of things we hope we will get out of the students for this um first of all obviously there's the beginning of some practical research experience at a sort of moderate size which we hope will stand them in good stead if they want to exit at this level but that also gives them a platform to go on and do a B Tech or even a Masters if they go that way. R: Do you think that the practical side, the design side would make them think more about design – in other words start theorizing design for themselves more? B: I would like to think so but I doubt it. Because I would say that, probably 99 out of 100 are not at that level yet in third year R: Where they could be saying ‘I’m doing this, this way – why am I doing this way?’ B: I think they’re probably not quite ready for that yet. That we would start looking at that in fourth yearthe kind of research work that we ask them to do in this project would be a requirement [in professional practice]. They would be required to look into sources, into styles, various aspects of the intended audience, you know – issues like that – so I think the experience there is transferable. The visual side is obviously relevant because they’re going to do similar things for a living in whatever job they’re going to do. And they are certainly encouraged to think about the design of this project in terms of the strength that they already have the area that they hope to go into or both if possible.

applying task knowledge in professional practice

identifying own strengths

integrating own experiences

C:..... R: So if a person can really handle the project, do you think it means that they would be able to transfer that skill – always remembering what you’ve just said that they like to hang on to the concept that is so dear to their heart? Do you think it means that if presented with a completely different challenge in another context they can cope because of the comprehensiveness of the conceptual skill and planning and so on that’s gone into this project? B: We hope so. Because in the real world there’s changes all the time. Because they’re going to have to be able to respond to what somebody else says.

integrating complex theory and practice

relocating personal knowledge

responding to differently articulated challenges

D: *The purpose is.... for students to think about simulated learning in relation to work-based design activities to make connections between their real life observations, the formulation of a design problem, and theory. The task encourages students to theorise their practice, and to practice their own design theory. verbal articulation in this journal is needed because students will have to explain and promote their design approach in working life. There is a need to say what you are doing and why you are doing it, and also to allow this to be shaped by the viewpoints of others.I'd like to find evidence in assessment that earlier lessons are carried forward into later endeavours.*

making connections between real life and curricular study

being able to conceptualise own practice

being able to mediate between own intentions and how others interpret

Table 4.6 below reflects the range of varied but specific assessment values that count as higher order transferable skills in design across sub-cases.

Table 4.6 Conceptions of Design Learning Transfer

A	B	C	D
understanding of the world	applying task knowledge in professional practice	integrating complex theory and practice	making connections between real life and curricular study
understanding of own disposition	Identifying own strengths	relocating personal knowledge	being able to conceptualise own practice
knowing own resources, what can be done with them, and in what situation.	integrating own experiences	responding to differently articulated challenges.	being able to mediate between own intentions and how others interpret

Within sub-cases, comments on higher order transferable design thinking skills recapitulate:

Learning integration that is design process-led ;

Self-theory about student's own design practice resources and intentions;

Transformative experiential knowledge that is personal and tacitly held.

4.4 OBSERVATIONS ACROSS AND WITHIN SUB-CASES

Throughout the foregoing analysis, and across sub-cases, observations deal with assessment issues that lie between the embedding context of programme design repertoires, and an orbiting focus on student design learning.

Design repertoires form the ontological dimension of higher order thinking skills transfer, where design task authenticity and student autonomy are at stake. Situated design learning is, in the works of Oak “....a balance where a designer expresses their interpretation of others’ needs though a public language of material and technique, form and symbol” (2000:87).

Across sub-cases, higher order transferable design thinking skills are variously represented through:

A practical knowledge approach, where as Prentice describes, the outcomes of the creative process of direct involvement with expressive media embodies the knowledge required for their production (2000:523) . Procedural knowledge through learning integration is valued. This is evident in Table 4.3, where students’ visual design concepts, execution and presentation are summatively assessed (sub-cases A and C), and in Table 4.4, where research/theory inform practice (sub-cases B and C).

Beckett’s inferential knowledge (2004), which embodies the ‘why’ of learning. This approach supports Reid and Petocz’s (2004:46).assertion that creativity in design is as much about formulating the problem as it is about achieving a solution. Theory as a product of practice, and practice as a product of theory are valued, as in sub-cases A and D shown in Table 4.4.

‘Revisable’ (Danvers, 2003:52) personal knowledge gained through experiential learning in a changing world. Transformative, tacit knowledge is valued (Tables 4.5 and 4.6, across sub-cases).

These expectations are negotiated and re-negotiated through mutual engagement with student-centred or joint (student and assessor) interpretive enterprise. In their dialogue with students through assessment activities, assessors hold specific values that speak about how design learning is to be developed through assessment.

In Chapter 5 I reflect on the ways in which assessment approaches and values that have emerged in sub-case interviews affect student design learning autonomy. I also examine the double-loop shift (Argyris and Schön, 1974, 1978) of my own assessment position within the case study, which moves from espoused theory to reflection on practice. Finally, I discuss the implications of the case study for summative assessment of complex performance in design.

CHAPTER 5

CONCLUSIONS: VALUES AND APPROACHES

Generally, research of any stripe must both contend with established knowledge, and entertain doubt, in a beneficial way. More than this, doing case study research that is credible within the School of Design and offers ways of enhancing teaching as practical service requires some justification. In this regard, I note that David Scott and Robin Usher (1996:179-180) have underscored the political implications of educational research claims as they may be held to apply in specific contexts.

I therefore discuss such implications in this chapter, doing so from two vantage points:

Firstly, David James (2000:157) mentions how Heron has shown a contradiction between the level of rationality we assume students can bring to learning, and that which we give them credit for in assessment and other processes. This is the tension between assessor defined approaches and student autonomy in design decision making that I have discussed in sections 3.2.1 and 3.2.2 of Chapter 3. The same tension has emerged in the analysis of case data in Chapter 4.

Secondly, and extending this issue, my interpretation of interview data in Chapter 4 suits my research purpose, but needs also to look to my own participation as a educational practitioner in the School of Design at DUT. With the unstinting co-operation of my colleagues in this case study in mind, I offer research justification on the basis that the implications of assessment approaches and values that emerge from this case study address our ways of going on with teaching and assessment. Although I asked each of my colleague assessors in their respective sub-case interviews whether they foresaw future changes in their assessment approaches, I feel that this was a very loaded question, given that they were fully apprised of my research interest.

5.1 REFLECTIONS ON DESIGN ASSESSOR INTERVIEWS

Autonomy of learning is a principle of the DUT Assessment Policy (2005). That all programmes should champion a particular vision and mission is also an institutional requirement, implemented through repertoires of practice. How successfully we as assessors within the School of Design accomplish these twin aims rests on the duality of societal and personal knowledge

In making such a separation, I first propose the following observations on case study relationships between design repertoires and societal knowledge:

It matters not that sub-case repertoires of practice under the aegis of product design vary; they are all approach-routes to societal and cultural knowledge as the overarching context of design learning transfer. In sub-cases A and C, the route to societal knowledge is pursued through substantial integration of practical and theoretical knowledge. Whether the task context of summative assessment is wider or narrower does not imply greater or lesser learning transferability. Similarly, in sub-cases B and D, primary research as a process of practice cannot be weighed against self-theory as reflection on practice.

Where the dichotomy of personal learning versus societal knowledge comes into sharp focus is the need for assessors to reconcile the educational values they apply to developing students' personal learning with the societal design knowledge enterprise of summatively assessed tasks. Though there was mutual formative engagement between assessors and students, there is a difference between formatively facilitating a self-initiated, personal student design enterprise and facilitating one that has joint enterprise relevance to a programme repertoire of practice. Correspondingly, what assessors might bring to learning in contexts of design communication *chosen by the student* does not have parity with what they might contribute to learning in stipulated or mediated contexts of design communication. The question then arises as to whether the assessor's or the student's design values predominate.

What must also be considered is the foregrounding/backgrounding of parts of learning that occurs variously over written, oral and visual forms of summative assessment.

5.1.1 DESIGN ENTERPRISE AND ASSESSMENT STRATEGY

During interviews, I found it difficult to value the content of assessment submissions shown to me *on the basis of what was or was not done*, even when this was explained to me. As an example, I viewed a particular design artefact and its supporting design communication presentation as strongly theoretical; this came as a surprise to my colleague assessor. The piece in question held for me a strong critical awareness of popular cultural issues. It occurred to me in the analysis stage of this study that I had foregrounded an aspect of the content of the interview design submission that was subjectively in accordance with my own knowledge repertoire, and implicitly, my beliefs in the joint enterprise of design.

On this design content issue, Reid and Petocz (2004:49) have referred to Entwistle and Marton's postulation that aspects of 'learned' content come to the foreground when needed, whilst other aspects recede into the background.

With particular significance for assessment in design, Entwistle and Marton (cited by Reid and Petocz) say that (ability to discern) the movement of encapsulated knowledge from background to foreground is a feature of high quality learning:

"Only some aspects of these entities [integrated understanding] could be visualised, but additional associated knowledge was readily 'available' when needed" (Entwistle and Marton, 1994:166).

(Reid and Petocz, 2004:49)

Entwistle and Marton speak here of the *student's* ability to discern the movement encapsulated knowledge, and to visualise or associate other aspects of knowledge entities, but this is most a important point for design assessment. The foregrounding and backgrounding of learning in students' design work means that only part of what the student knows can be read in the form of an assessment submission; the rest is

tacit, or embodied. This holds true whether it is reflection (in written form) or action (the process and products of action) that is assessed.

My own emphasis as a Design teacher on written reflection as a form of summative assessment needs to be reconsidered in this light. What I have in effect asked students to do is to background what they have already personally delivered in practical and theoretical tasks, and to now shape this as societal knowledge, in a written modality. Through data analysis of the sub-case interviews with other design teachers (as analysed in Chapter 4), I came to realise that my assessment approach conflates my conception of design enterprise with my conception of design repertoire. This wonderfully harmonious design-educational worldview does not however straightforwardly serve my belief in students' personal learning autonomy. The authenticity of my terminal assessment task in terms of professional practice in fashion also seems in retrospect somewhat overblown; few fashion professionals would be able to compose their tacitly held design approach in written form.

From a case study purview, this is a problem not confined to my own situated assessment practice. Assessors' approaches of CoP mutual engagement with personal or joint enterprise that I highlighted in chapter 4 are unresolved; they embody outward programme repertoires of design practice, but do not essentially represent the inward educational values of assessors.

5.2 DESIGN ASSESSMENT APPROACHES AND VALUES

In summing up interview data in Chapter 4, I found that three constructions of transferable design knowledge emerged from this case study. Here I revisit these summations as they intrinsically construct design knowledge through assessment approach, as follows:

1. A practical knowledge approach, where the process of direct involvement with expressive media embodies the knowledge required for their production (Prentice 2000:523). In this approach, the assessor assumes tacit learning in order to read this knowledge.

2. Inferential knowledge, that embodies the 'why' of learning (Beckett, 2004) and involves the formulation of the design problem. This assessment approach assumes that the student can apply their design knowledge in concrete design expression.

3. Revisable, transformative personal knowledge of a changing world (Danvers 2003:52); that is tacitly held. The assessment assumption of tacit design knowledge is that it will allow students' design expression to find acceptance in the social world.

Embodied, inferential and personal knowledge all involve both tacit and overt integration of theory as knowledge, and practice as knowledge. How then do we as design assessors in the School of Design make sure that students receive due recognition of both tacit and overt learning? Ray Monk (2005:102) mentions Wittgenstein's often quoted aphorism: 'An inner process stands in need of outward criteria' but notes that Wittgenstein placed great emphasis on the need for sensitive perception of these outward criteria in all their imponderability.

As Dennis Atkinson has said, referring to Butler's comments in his paper on pedagogised identities in the art curriculum, student identities are excluded through 'the discursive construction of a constitutive outside' (2001:97). In the same way, design programme sub-case repertoires of social and cultural consumption, and professional practice are on the 'outside' of students' sense of themselves. Yet this 'outside' world of meaning is the embedded context of design assessment.

This means that the highly prized attributes of originality, creativity and innovation that students are expected to express in design are dependent on assessor views of this external reality. Here I must reiterate Schon's comment, cited by Lawson (2004:100), that designers inhabit students' worlds which contain 'particular configurations of things, relations and qualities. In order to appreciate what is novel or transformative in student work, assessors themselves must conceptualise student work at Bigg's extended abstract level of the SOLO taxonomy (1996:351-352). At the same time, this judgment also relies on the ability of the assessor to appreciate what has been integrated in design learning, as I have described this in section 3.2.3 of Chapter 3.

5.2.1 DESIGN ASSESSMENT STRATEGY AND EDUCATIONAL VALUES

I have mentioned in my summation of interview observations in Chapter 4 that, notwithstanding assessment approaches regarding design knowledge, assessors hold specific values concerning how design learning is to be developed. Although assessors' theories of learning were not directly discussed in interviews, much of these discussions showed their commitment to students' personal learning from independent experience. In sub-case A, this was evident in the assessor's efforts to understand the student's perspective, and to develop it without interference. In sub-case B, the assessor was conscious of students' struggles to grapple with their self-initiated research task, and to render this in writing. In sub-case C, the assessor's account of developing ideas in student work showed sensitive attention to learning shifts from formative to summative stages. In sub-case D, my own case, the primary concern was that students should make meaning from their own design efforts.

The overall case study shows that assessors sought ways of bridging the gap between their outward, highly diffuse design repertoires, and the learning they discerned within student design work. To put this in terms of assessment approach and assessment value, they were concerned with societal knowledge as an approach, and personal learning as a value. They faced the challenge of dealing with a practice repertoire scope for which criteria are imponderable, while attempting to promote values of learning transfer and transformation.

The problem of joint versus personal enterprise as distinct kinds of assessment interaction within programmes compounds these ambiguities. From the socio-cultural assessment point of view that I have discussed in Chapter 3, the mutual, social participation of assessors and students in the conduct of assessment enterprise is not without specific requirements. Theoretically, as well as in this case study, these have emerged in learning integration as the deciding factor of task authenticity, and in learning transformation as the resultant benefit. Transferability of learning as it is represented in summative assessment of complex performance in design is however still contentious, and unavoidably allied with learning autonomy.

5.2.2 CASE STUDY IMPLICATIONS FOR SUMMATIVE DESIGN ASSESSMENT

With the proviso that all forms of summative assessment bear some resemblance to 'tests', I turn to Samuel Messick's significant delineation of the differences between content, criterion and construct validity in tests, which bring some clarity to the transformative and transferable learning issues of design enterprise in this case study.

To paraphrase Messick (1989:7) on tests, content validity is based on expert judgements as to the relevance of content, without regard for levels of performance, or with social consequences. Overlooking the technician exemption of social contingency from Messick's point, the relevance of design content emerges in this case study from prior formative negotiation between students and assessors. The inferences involved in conceiving either personal or joint design enterprises and the intentionality of practical design implementation are established in this way. These personal and societal enterprises are 'revisable' (Danvers, 2003:52) in formative interaction between students and assessors.

By allowing students to make a series of revisable self-evaluations of the ways in which their design submissions communicate design meaning, and in what contexts this might apply, autonomous transformative and transferable learning is made possible. Such a practice allows the assessor a Lacanian relationship of co-learning between teacher and student, where both selves are constructed (Griffin, 1997: 6).

But joint design enterprise is still repertoire-dependent, and demands a very high degree of participation on the parts of both assessors and students. Autonomy develops in the relation to the social practices and values (in this case, assessment values and practices) that may inhibit or develop it (Griffin, 1997:11). To sustain this participation in joint design enterprise, the assessor needs to be unexceptionally consistent in the way that assessment is approached, and what is valued. More than this, students' lived experience must be accommodated in the design repertoire that discursively authenticates assessment tasks.

Personal enterprise, by comparison, requires the assessor to constantly seek a balance between learning through the assessment relationship of social participation, and the societal, cultural or professional nature of the programme repertoire. By means of negotiation between teacher and student values, including the value of autonomy, are continually reconceptualised (Griffin, 1997: 11).

The difficulties involved in negotiating learning autonomy as a summative assessment value are to some extent resolved by Messick's analysis of construct validity. He says that threats to construct validity are under-representation, and construct-irrelevant variance (Messick, 1989:7). Translated into design terms, this means that there may be in assessment evidence a lack of corroborating design elements, or that there may be superfluous design elements. Messick further says:

“...the test score is not equated with the construct it attempts to tap, nor is it considered to define the construct, as in strict operationalism. Rather, the measure is viewed as just one of an extensible set of indicators of the construct.....communality among such indicators is taken to imply the operation of the construct to the degree that discriminant evidence discounts the intrusion of alternative constructs as plausible rival hypotheses”.

(Messick, 1989:7)

The usefulness of Messick's assessment construct analysis lies in the idea that the extensible range (of discriminant evidence) of what *is* done by the student in a summative assessment submission should leave no room for doubt or confusion. Such an interpretive stance supplants arguments as to what *is* or *is not* done. This is tenable though only if the assessment task is circumscribed by an assessment contract that states what is foregrounded or backgrounded by the student.

I venture here the suggestion that a negotiated mode of design expression (written, oral, or visual) should form the basis of summative assessment. This would support autonomous student learning, and it would help to validate summative assessment. The assessment risks involved in discriminating between foregrounded and backgrounded knowledge may be obviated if equal responsibility for what is backgrounded is negotiated through summative assessment contracts between

students and assessors. As one contractual scenario, a student may through revisable self-evaluation and engagement with an assessor decide that their production of design artefacts embodies their design knowledge more persuasively and more comprehensively than would written reflection. In this scenario, written work is backgrounded in assessment, and the exhibition of designed products is foregrounded through mark weighting. Conversely, where a student shows strength in drawing reflective inferences from practical work, artefact production may be backgrounded while written reflection is brought to the fore in the weighting of marks. This sort of contract is one option amongst the various collaborative assessment strategies that Gipps (1999:375-384) places within the socio-cultural approach to assessment that I have discussed in Chapter 3.

Finally, I make a brief note on criterion-referenced assessment validity. Messick (1989:7) and SAQA (2000) explain that criteria pertain to a particular applied purpose or setting. This is unmanageable in terms of the revisable societal particularity of design enterprise. As a result, the gulf between learning autonomy and programme repertoires of practice is accommodated by the formulation of abstruse SAQA outcomes and specific assessment criteria that express enveloping descriptions of the design enterprise context (Gray, 2006:3). This affords design programmes neither objectivity nor subjectivity in the mutual engagement of teachers and students with assessment, and means that their assessment positions must be both outside and inside (Shay, 2005. 675-676) of their programme design field. There is then a convincing argument for a negotiated rather than an outcomes-based curriculum, that would support the creative resourcefulness of both assessors and students.

Exploring the significance of these case study findings within other Design disciplines and other institutions would provide interesting avenues for further research. The uncritical application of mandatory outcomes-based curricula in Design programmes is debatable (Gray, 2006:3-5) and assessment in Design is a developing focus in educational research.

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